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## PRESENTATION

OF THE

## ROYAL AWARDS

TO

MR. AUGUSTUS C. GREGORY, THE EXPLORER OF NORTH  
AUSTRALIA; AND LT.-COLONEL ANDREW SCOTT WAUGH,  
DIRECTOR OF THE TRIGONOMETRICAL SURVEY OF INDIA.

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THE President opened the Meeting by making the following statement of the grounds on which the Council had awarded the Medals :—

The Founder's Gold Medal has been awarded to Mr. Augustus C. Gregory, for his extensive and accurate surveys in Australia, and particularly for his last great and successful exploration of North Australia and his journey thence, or from the Victoria of Stokes to the Colony of New South Wales, as recommended by the Royal Geographical Society, and carried out under the orders of Her Majesty's Government.

When Her Majesty's Government decided that an exploration of North Australia should be made upon the general plan advocated by this Society, and in accordance with the suggestions of our members Stokes and Sturt, they wisely selected so experienced an Australian surveyor as Mr. Gregory to carry out this great and important project. That gentleman was already well known to us by his successful labours in unravelling the condition of the interior of Western Australia, as recorded and mapped in the 18th and 22nd volumes of our Journal. In the first of these journeys (in 1846) he ascertained that the inner part of that colony is generally flat, broken here and there by low hills of granite or other igneous rock, the depressions being usually occupied by salt lakes or marshes, no fresh-water streams having yet been detected. In 1848, Mr. Gregory proceeded from Perth on what was termed "the Settlers' Expedition," or an endeavour to discover a tract of good

land in the latitude of Champion Bay, and, if possible, to penetrate to the Gascoyne river, which falls into the northern part of Shark Bay. Crossing the Moore and Arrowsmith rivers, he ascended the Murchison, for 50 miles towards its source, and found some rich soil on its banks. Determining everywhere his positions astronomically, he proceeded to the affluents of that stream and made ineffectual efforts to force his way through the dense brush or scrub of the waterless, arid plains south of Shark Bay; when the exhaustion of his horses, great heat, and the sterile sandy soil proved to him that the interior of the colony could only be explored in the moist winter months. He therefore returned to Perth, having travelled about 1500 miles without detecting any notable quantity of good land, and having failed in reaching the Gascoyne river, from the want of fresh water and the impenetrable thickets of scrub.

Most of the officers of the last and great expedition, which we had so long advocated, having been sent from England to Sydney, the expedition was there placed under the orders of Mr. Gregory. Being properly fitted out under the directions of our associate Sir William Denison, the Governor of New South Wales, and proceeding thence by sea through Torres Strait and along the north coast of the continent, it reached the great bay, first made known to us by Capt. P. King in 1819, the eastern gulf of which, or Queen Strait, and its stream the Victoria, were explored by Wickham and Stokes in 1839.

Having ascended the Victoria, with the schooner Tom Tough, as far as was practicable, Mr. Gregory established a camp on the right bank of this stream, at about 80 miles from its mouth. With his brother, Mr. H. Gregory, Mr. J. S. Wilson the geologist, and Dr. Ferdinand Mueller the botanist, he then explored the Victoria to Jasper Creek, determining the geological nature of the country, and ascertaining that the river made a great southward bend. Again taking with him his brother, and Dr. Mueller, together with the artist, Mr. T. Baines, he marched southwards to ascertain if the saline desert, which Sturt had discovered in proceeding inland from the southern regions of Australia, and which he had himself found to prevail in Western Australia, was also to be met with in a journey southwards from the north coast.

For this purpose he ascended the Victoria to its source, and found the hilly or dividing range to have an altitude of 1660 feet above the sea. Traversing this watershed, he descended by a

stream flowing south, which he named Sturt Creek, and which, bending to the S.S.W., terminates in a desiccated salt lake near Mount Wilson, in S. lat.  $20^{\circ} 2'$  and E. long.  $127^{\circ} 5'$ . Whilst the south-eastern and southern slopes of the dividing range were thus proved to be everywhere dry and sterile sands, the whole of the territory to the north of the same presented the most striking contrast, being generally fertile in grasses, particularly the extensive grounds named Hutt Plains and Roe Downs.

In this first effort, therefore, made specially by the advice of our medallist Sturt, the grand geographical and statistical feature, which was suspected to exist, was brought to the test; and we may now fairly infer, that all the central portion of this continent, as well as the long southern coast-line examined by our associate Eyre, and a considerable maritime frontier of Western Australia, constitute an uninhabitable desert, probably the dried-up bottom of a sea, and that hence all future intercourse between our Australian colonies must take place either along the fertile coast ranges, or by sea.

Returning to his camp, which he had left under the charge of Mr. Wilson, who had in the mean time examined the adjacent country, of which he sent home a sketch map to this Society, Mr. Gregory sent away Mr. Baines, with Mr. Wilson, and the larger number of his party, in the schooner; and after giving directions that the vessel should meet him at the head of the Gulf of Carpentaria, he set out on his chief mission, accompanied by his brother, Mr. Elsey the surgeon, Dr. Mueller, and three men.

Quitting the basin of the Victoria, and passing over a broad table-land of sandstone, he entered a valley watered by a tributary of Leichhardt's river, the Roper, which he named Elsey Creek, in S. lat.  $15^{\circ} 15'$  and E. long.  $133^{\circ} 10'$ . He next took a south-south-easterly direction to the west of Leichhardt's route, or about 70 miles distant from the western shore of the Gulf of Carpentaria, and traversed the various rivers discovered by his adventurous precursor (but nearer to their sources) until he reached the Albert, which empties itself into the head of the Gulf. Not meeting there with the party sent by sea, under the orders of Mr. Baines, he left the 'Plains of Promise' of Stokes, and crossed the river Flinders at about 80 miles distance from the Albert, and, journeying to the north-east, fixed a position on the Gilbert River at S. lat.  $18^{\circ} 0'$  and E. long.  $140^{\circ} 40'$ . Ascending that stream, Mr. Gregory left behind the drainage into the Gulf of Carpentaria, and traversed the high basaltic plateau which separates the waters flowing into that gulf, from those which

descend into the great eastern ocean. To the dividing high lands he assigned the name of 'Newcastle Range,' in honour of the Secretary of State for the Colonies, who had sanctioned the expedition. Reaching the Burdekin, he followed that stream south-eastwards to its junction with the Cape river of Leichhardt.\*

The next march showed the connection of the Suttor of Leichhardt with the Belyando of Mitchell; then striking south-west from the latter stream, Mr. Gregory skirted the Peak range, the extreme point to which squatters have extended their dwellings, *i. e.* in S. lat.  $23^{\circ} 41'$  and E. long.  $147^{\circ} 50'$ , or about 560 miles from the head of the Gulf of Carpentaria.

Whilst a great breadth of entirely sterile tracts, with only one insulated rich spot on the river Roper, prevails between the basin of the Victoria on the north coast and the Gulf of Carpentaria, with occasional poisonous plants, Mr. Gregory found nearly all the vast region between the eastern side of the gulf and the northernmost station of our settlers, to be more or less fertile. During the last weeks of the expedition the horses fattened, and after traversing the rivers Mackenzie, Comet, Dawson, and Burnett, the party reached the Brisbane and Moreton Bay in excellent health.

The value of the researches of Mr. Gregory and his associates cannot be appreciated until all their records, and the general map, now in course of compilation by Mr. Arrowsmith, shall have been published; although we already know how vastly our acquaintance with the geographical distribution of plants has been enlarged by the collections of Dr. Mueller.† In the mean time, however, the geographers of all countries will admit that we have rightly awarded our Founder's Gold Medal to the successful explorer of such vast unknown lands, through which his united journeys have amounted to upwards of 6500 miles, and in making which he has determined many points of longitude as well as latitude, and has accurately defined the character of a fine basin of North Australia, which may probably, at no distant day, become a British colony,—a subject which will be particularly alluded to in the discourse which follows.

\* It is my pleasing duty to state a fact which is in the highest degree creditable to Mr. Arrowsmith. That acute and indefatigable geographer, without any other guide than his own comparison of somewhat discordant materials, had placed upon his map the point of the confluence of the Burdekin and Cape Rivers, or Mount M'Connell, at not more than ten miles in error of the precise longitude,  $156^{\circ} 50'$  E., determined by Gregory; for the latitude only had been fixed by Leichhardt, *viz.*, S. lat.  $26^{\circ} 30'$ .—R. I. M.

† See Sir W. Hooker's *Journal of Botany*.

The President, having read the preceding grounds of the award, rose, and thus addressed the Right Hon. Henry Labouchere :—

“ Mr. Labouchere,—Having taken for many years the liveliest interest in the exploration of North Australia, it has been peculiarly gratifying to me to see this very difficult operation effectually carried out by a surveyor of the Australian colonies, so admirably qualified to ensure success as Mr. A. C. Gregory.

“ On this memorable occasion I rejoice that you, Sir, her Majesty’s Secretary for the Colonies, under whom this great task has been happily terminated, should have honoured us by attending here to receive for the explorer of North Australia the Founder’s Medal of our Society, which I request you to transmit to Mr. Gregory with the expression of our entire and hearty approbation of his conduct.”

Mr. Labouchere replied :—

“ Sir,—It affords me sincere pleasure on this occasion to receive, on the part of Mr. Gregory, this well-merited mark of approbation of the Royal Geographical Society. That gentleman had been selected by the Government for the arduous and important task of exploring the vast regions yet unknown to civilized man in North Australia, and the manner in which he has performed it has amply justified the selection.

“ Of Mr. Gregory’s scientific qualifications it would ill befit me to speak before such an audience, but I may advert to those moral qualities which were not less necessary to an explorer of those vast solitudes. Sir William Denison, in a despatch which rendered a high testimony to the merits of Mr. Gregory, observed that it was to his prudence and courage that the safe return of the entire party was probably due.

“ You have called attention, Sir, to the description which Mr. Gregory gives of the soil and climate on the banks of the Victoria river; and, indeed, it is of such a nature that it is no extravagant supposition that some of us may live to hear of that hitherto unknown region becoming the home of a prosperous English settlement.

“ Such anticipations have always been a source of great gratification to my mind; for I believe that, among the many blessings and advantages which have been permitted to this country, none ought to be ranked higher than, that she should have been enabled to scatter so widely over the globe the manners, the freedom, the civilization, and the religion of Englishmen.”

Mr. Labouchere concluded by assuring the Meeting that he would transmit the medal which he had received from the hands of their distinguished President to Mr. Gregory, who, he was sure, would highly value such an honour.

The President then continued :—

The Council has adjudicated the Victoria or Patron’s Gold Medal

to Lt.-Colonel Andrew Scott Waugh for his valuable and able extensions of the Great Trigonometrical Survey of India, and particularly for his recent triangulation carried on through Rajputana, the Panjab, and the Himalayan Mountains, thereby adding to our geography an accurate and intimate knowledge of a part of the globe most interesting to mankind at large, and of vital importance to Great Britain in particular.

This Trigonometrical Survey of India was commenced by Colonel Lambton in 1803, and continued by him till his death in January 1823. During that period he measured an arc of the meridian from Punnae in  $8^{\circ} 9' 35''$  near Cape Comorin to Damargidda in lat.  $18^{\circ} 3' 16''$ , being about ten degrees of latitude, and extended a net of triangles over the south part of the Peninsula of India, reaching on the east side of the principal meridian to the 19th parallel. Colonel Everest, who had been his chief assistant since 1817, and succeeded him at his death, completed the section commenced by Lambton, and extended the arc to Seronj, lat.  $24^{\circ}$ , near which place he measured a base of verification. This is the most important base in the Trigonometrical Survey of India, as all the work to the north, east, and west is dependent upon it. Colonel Everest carried on the measurement of the meridional arc to its completion in the Dehra Dún, lat.  $30^{\circ} 19'$ ; the whole extent from Cape Comorin being  $22\frac{1}{2}$ ° of latitude. He also extended a longitudinal series from the Seronj base to Calcutta, in the neighbourhood of which he measured a base of verification. From points selected on this series originate distinct sets of meridional series, the northern limits of which are united by a longitudinal series running along the foot of the great mountain chain, which thus completes the triangulation of that vast tract, comprising about 223,000 square miles.

When this distinguished officer left India, Colonel, then Captain Waugh, who had been his chief assistant since 1832, was appointed his successor in December 1843, and following up the admirable plan of survey laid down by his predecessor, the principles and methods of which have been described by Everest,\* he worked out the several series left unfinished between the meridional arc and that of Calcutta. Finally he measured a base of verification at Sonakoda, lat.  $25^{\circ} 18'$ , long.  $88^{\circ} 18'$ , and also completed the triangulation of the south coast series from Calcutta to Ganjam.

Colonel Waugh then commenced operations on the west of the great meridional arc, and measured a longitudinal series from the

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\* Account of the Measurement of the Arc of India. 2 vols. 4to., 1847.

base at Seronj, passing through Rajputana and the sandy desert to Karachi, upwards of 700 miles in extent, where a base of verification was measured, whilst the triangulation of the Bombay meridian was connected with this series. He further extended another series in a north-west direction from the stations of the meridional arc, Banog and Amsot, through the plains of the Panjab and a great portion of the mountainous tract to Peshawar. Again, a base of verification was measured near Attock, the series embracing an area of about 67,000 square miles. A meridional series is far advanced from the base at Karachi, along the Indus, to that near Attock. This operation will complete a gigantic geodetical quadrilateral, of which the great arc series forms the eastern side. Simultaneously with these trigonometrical operations, most minute and elaborate topographical surveys have been executed under the superintendence of Colonel Waugh throughout the greater portion of these tracts.

Lastly, having determined that of all the mountains whence the affluents of the Ganges run, the loftiest summit is situated about midway along the Himalayan chain, and finding that this culminating point (N. lat.  $27^{\circ} 56'$ , E. long.  $86^{\circ} 53'$ ) was 29,002 English feet above the sea, and consequently 846 feet loftier than the famous Kinchinjanga of Nipal, Colonel Waugh has gratefully and appropriately named this, the highest known elevation in the world, Mount Everest, after his valued geographical instructor.

These great results appear to come peculiarly within the scope of the Society, which takes for its motto “Ob Terras Reclusas;” for eight years ago, the mere exploration of the tracts in question would have been deemed impracticable, whereas under the direction of our Medallist, a vast portion of these countries is now accurately delineated, on the basis of astronomical observations, connected by the highest appliances of modern geodetical science and art.

The President rising thus addressed Colonel Everest:—

“Colonel Everest,—The reasons which induced the Council to adjudicate the Patron’s Gold Medal to Lt.-Colonel Waugh having been made manifest by the document I have just read, I now place this our tribute to his ability and success in your hands, requesting you to convey it to your eminent associate, with the assurance that we deeply appreciate the importance of his labours.

“By transmitting this Medal, through your medium, to the officer who learnt his lessons under your able guidance, the Royal Geographical Society recognises the right of your predecessor Lambton and yourself to have had similar distinctions: and I rejoice that by

this one act, the Grand Trigonometrical Survey of India should now receive a reward which it so long ago merited."

Colonel Everest replied :—

" Mr. President,—I beg to return my acknowledgments for the complimentary terms in which you have been pleased to advert to the labours of my honoured predecessor and myself, and on behalf of my esteemed successor Lieutenant-Colonel Waugh to express the warmest thanks to yourself and the Royal Geographical Society for the very proud mark of distinction which has just been conferred on him, by the award of the Patron's Medal of this year.

" The applause of our fellow men is naturally prized by us all, and nothing is more cheering to a person engaged in an arduous undertaking, replete with privations and hardships, than the persuasion that, if he endures to the end, his labours will not be unrewarded. Colonel Waugh, however, is not of that stamp to need such a motive to induce him to persevere in the strict performance of his duty, and having no precedent which could hold out the prospect of such a distinction as the present, it will come on him altogether as an unexpected boon, and as such, will be additionally acceptable. I am certain that this Medal will be received by Colonel Waugh with the deepest and most sincere feelings of gratitude and respect for those who selected him for the proud honour of possessing it, and not only by himself, but by all the members of the department of which he is the chief, will this adjudication be hailed as an earnest that there is a body of gentlemen most qualified by their talents and knowledge to form a judgment, and as willing, as able to act according thereto, with right singleness of purpose. Sir, if anything could enhance the value of this mark of distinction, it is the circumstance that it has been conferred during the presidency of a gentleman of wide renown—known wherever civilization reaches—acknowledged even by our antipodes as one of the first geologists of the age, and not more distinguished by his scientific attainments than by his courtesy, urbanity, and kindness of heart.

" The Trigonometrical Survey of India has been in progress ever since 1803, a period of 54 years, and will, in its entirety, embrace a tract which exceeds the area of Great Britain and Ireland in the ratio of about 12½ to 1. Of course a vast deal still remains to be accomplished before so gigantic an undertaking can be pronounced complete; and as Colonel Waugh has now been engaged in this arduous task for 25 years, it is needless to expect much prospective effect from the present award as far as he is concerned, for his career in India must be drawing towards its close; but the memory of the present graceful act of this Society will assuredly not be lost on his eventual successor, or on India in general. He is still in the prime of life; and though he has suffered lately from more than one severe attack of illness, yet it is to be hoped that the injury which his constitution may have thereby sustained, is not greater than can be restored by a return to his native country, and that he will some day arrive to return his thanks in person to the Royal Geo-

graphical Society, and by his co-operation and counsel add fresh vigour to the active exertions of a body so effective—the first—the only learned Society in England, let me say, which has ever held out the hand of sympathy, friendship, and encouragement to the Great Trigonometrical Survey of India.

“Mr. President and Gentlemen, I thank you for having listened to me so patiently, and I conclude with my earnest wishes, that the prosperity of this Society may continue, until every portion of this globe shall have been as satisfactorily explored and as accurately delineated, as the regions under the influence of the Honourable East India Company.”

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